



DEPARTMENT OF THE NAVY  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS  
WASHINGTON, DC 20350 -2000

IN REPLY REFER TO  
OPNAVINST 3930.7C  
OP-231

7 JAN 1985

OPNAV INSTRUCTION 3930.7C

From: Chief of Naval Operations

Subj: OPERATIONAL CONCEPTS FOR THE SUBMARINE NR-1

Ref: (a) OPNAVINST C3000.5C (NOTAL)

Encl: (1) Charter for the Submarine NR-1 Advisory Group

1. Purpose. To promulgate the operational concepts for Submarine NR-1.

2. Cancellation. OPNAV Instruction 3930.7B.

3. Background. The NR-1 is a small deep submergence nuclear powered submarine designed to operate at extended depths for a variety of deep ocean tasks.

4. Objectives. The NR-1 System objectives include the following:

a. Primary Objective: The primary objective of the NR-1 is to exploit the long endurance capability derived from the nuclear power plant. This includes conducting extended military operations and oceanographic research at deep depths, including operations of an ocean engineering nature.

b. Secondary Objective: The secondary objective of the NR-1 is to allow the Navy oceanographic research community to utilize the unique capabilities of this submarine in their tasks. Participation of Navy laboratories and research activities in utilization of NR-1 for oceanographic research and ocean engineering operations is encouraged.

5. Mission Capabilities. The following listed mission capabilities have been established for the NR-1.

a. Search. The NR-1 is capable of acoustic and visual search independent of other ships for the location and inspection of sunken ships, aircraft and other objects down to test depth.

b. Survey. The NR-1 is able to perform oceanographic surveys to test depth including collection of oceanographic and Bathymetric data and samples.

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c. Object Recovery/Implantation. The NR-1 is capable of recovering/implanting objects, within size and weight limitations, and assisting surface ships to recover/implant heavier objects to test depth.

6. Organizational and Control

a. Personnel. The minimum crew required for underway operation of NR-1 consists of an Officer in Charge, one additional officer, and five enlisted men. In addition, two research personnel (military or civilian) may be carried as necessary, depending on the specific missions involved in a particular operation. The normal crew complement for sustained at-sea operations of NR-1 consists of an Officer in Charge, two other officers and eight enlisted men (two of which may be the research personnel noted above). The NR-1 crew allowance, which includes personnel in excess of those required for underway operation of NR-1, consists of one Officer in Charge, one Engineer Officer, one Assistant Engineer Officer, and fifteen nuclear trained enlisted men. Billets for one senior submarine qualified storekeeper, one junior storekeeper and one submarine qualified yeoman or personnelman provide dedicated shore support for NR-1. Additionally there are six temporary duty billets filled by recent nuclear power prototype graduates serving a six month tour. These personnel do not go to sea but do qualify to stand inport watches.

b. Operational Control. Operational control will be exercised by the cognizant fleet commander in accordance with reference (a).

c. Tasks and Missions. Approval of all mission objectives and tasks assigned NR-1 must be obtained from CNO with the concurrence of the Naval Sea Systems Command (SEA 08). Organizations desiring to utilize the services of NR-1 will forward requests to CNO (OP-23) with copies to NAVSEASYS COM (PMS-395 and SEA 08), CINCLANTFLT, COMSUBLANT and COMSUBRON TWO. The request for services should contain a detailed outline of the proposed operations to include any special equipment installations or other technical requirements and should be made with sufficient lead time to allow any required modifications to be technically reviewed prior to accomplishment. Service requests will be reviewed and, if approved, forwarded to the fleet commander for scheduling purposes.

d. Scheduling. The Fleet Commander will prepare proposed operating schedules based upon NR-1 training requirements and approved missions. Proposed schedules will be forwarded

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annually to CNO (OP-23) for approval with copies to NAVSEASYS COM (PMS-395 and SEA 08) and the Office of Naval Research (Code 102C). Changes which significantly affect accomplishment of scheduled missions will also be forwarded for CNO approval. Prior to approving the original schedule or changes which affect accomplishment of scheduled missions, concurrence will be obtained from Naval Sea Systems Command (SEA 08).

e. Support. Administrative, operational and logistic support required in the execution of these tasks and schedules will be provided by the Fleet Commander in Chief. The appropriate Submarine Force Commander will have responsibility for safe operation of NR-1. NR-1 maintenance periods should be kept to a minimum practical duration to allow response to emergent high priority operations.

f. Nuclear Aspects. It is desired that operations be approved and administered in basic conformance with the procedures delineated for nuclear submarines in reference (a). Nothing in this document should be construed to detract in any way from the responsibilities assigned to the Director, Naval Nuclear Propulsion Program, for the safe and proper operation of the nuclear propulsion plant as defined in reference (a).

7. Fast Transport Capability. In order to provide responsive support to missions at widely separated geographic locations, NR-1 has the capability to be transported, when required, in the well deck of an LSD, or be towed submerged to a mission site.

8. Logistics/Support. The design of the NR-1 incorporates long endurance submerged capability. Reliance is placed on an escort ship or a support ship while NR-1 is operating on the surface. Whether an escort is necessary after the NR-1 submerges will vary with specific missions. In general, the requirements for escort capabilities will not exceed those listed below:

a. Escort Ship Capabilities

- (1) Surface and submerged towing capability
- (2) Emergency transfer at sea capability for NR-1 personnel by rubber boat
- (3) At-sea endurance of 30 days
- (4) Communications
  - (a) Capability to communicate with the NR-1 surfaced and submerged

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(b) Capability to communicate with shore-based facilities

(5) Capability to track the NR-1, while submerged, in range and bearing. This capability is only required for certain missions. A portable suit of equipment will provide this capability if needed.

(6) Capability to navigate precisely to any given exercise/search area.

b. Support Ship Capabilities. On extended operations away from home port the NR-1 will be supported by an existing ship, modified as necessary to accomplish the support mission. Characteristics required of the support ship in addition to those listed in Paragraph a above are:

(1) Transfer at sea from the NR-1 of personnel and material by rubber boat.

(2) Endurance:

(a) Support Ship capability to remain at sea 60 days.

(b) Capability to resupply the NR-1 for 60 days.

(3) Capability to effect minor repairs to the NR-1 and its equipment in a protected anchorage or port.

(4) Capability to provide emergency power to the NR-1 while the NR-1 is moored alongside (3 phase, 440 volts, 60 cycles, 100 amperes).

(5) Facilities for berthing and messing NR-1 personnel.

(6) Space for NR-1 records; spares to support a 60-day operation. This will include open deck stowage which will be specified for each mission.

(7) Capability to receive and stow samples or objects from NR-1 and carry them to base. The refrigerated space required will vary and will be specified for each mission.

(8) Provide space aboard for portable equipment for analysis, calibration, photo processing and other special test equipment to support the NR-1 and its operations. The space required will be specified for each mission.

c. Escort Ship and Support Ship Availability. Present plans do not provide for permanent alteration of any surface

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ships for use as the NR-1 escort ship or support ship. Available surface ships will be temporarily modified as required.

d. Shore Support. Shore support should have ship repair and electronic equipment repair capability, office, administration and berthing spaces. A nuclear repair and docking capability suitable for NR-1 should be available. A submarine tender with appropriately qualified nuclear repair facilities are adequate for the above purposes.

## 9. Training

a. With the exception of scientific personnel carried for specific missions and with the exception of the NR-1 yeoman/personnelman, storekeepers and temporary duty personnel who are assigned for NR-1 shore support and do not go to sea with the ship, all officer and enlisted personnel will be qualified as follows prior to reporting to the NR-1:

(1) Qualified in submarines.

(2) Qualified for the supervision, operation and maintenance of naval nuclear propulsion plants.

(3) Have completed SCUBA diver entrance medical examination (attend SCUBA training if possible).

b. With the exception of scientific personnel carried for specific missions and with the exception of the NR-1 yeoman/personnelman, storekeepers, and temporary duty personnel, all officer and enlisted personnel will be qualified and certified in operation of the nuclear propulsion plant and will receive the following additional training:

(1) Qualification in ship control including surface cruising, surface towing and submerged operation.

(2) Training in operation and maintenance of ship control equipment.

(3) Training in operation and maintenance of oceanographic equipment.

10. Submarine NR-1 Advisory Group is established as chartered in enclosure (1) to facilitate the planning and logistic management for use of this unique deep diving submarine. The Director, Deep Submergence Systems Division (OP-23) will serve as Advisory Group Chairman, promulgate meeting minutes, and forward recommendations of the Group as appropriate. The

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Advisory Group will be guided in its functioning by the following:

a. NR-1 will be made available for general use by the oceanographic community subject to existing financial reimbursement and security requirements.

b. Where necessary, Navy operational uses of NR-1 will take priority over research, non-operational Navy use of NR-1.



N. R. THUNMAN  
DEPUTY CHIEF OF NAVAL OPERATIONS  
(SUBMARINE WARFARE)

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CHARTER FOR THE  
SUBMARINE NR-1 ADVISORY GROUP

1. Purpose. To facilitate the planning and logistic management for use of the Submarine NR-1.

2. Functions

a. To survey projects and identify and encourage those that could utilize the services of the Submarine NR-1 effectively to further their objectives.

b. To establish a recommended priority for the accomplishment of projects utilizing the submarine NR-1. The priority listing will be based on consideration of:

- (1) Need for unique capabilities of the submarine NR-1.
- (2) Compatibility of NR-1 characteristics with mission needs.
- (3) Military payoff.
- (4) Probability of success.
- (5) Emergent operational uses.

c. To monitor overall funding requirements of the Submarine NR-1 and make related recommendations when appropriate.

d. To review other aspects of Submarine NR-1 and make recommendations accordingly.

3. Membership. The Advisory Group will be chaired by OP-23 and consist of representatives from:

OP-00N

OP-095

OP-009

Oceanographer of the Navy

CNR/CND

COMNAVSEASYS COM (PMS-395)

Others as may be invited

Enclosure (1)



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4. Procedure

a. The Advisory Group will meet at least twice per year to perform its functions and to update (review) its priority listing based on results and new projects brought to its attention.

b. Meetings will be open to those with ongoing projects which utilize Submarine NR-1 services and to those with potential projects which may be under consideration for use of Submarine NR-1 services.

c. A standing invitation will be maintained for representatives of CINCLANTFLT, COMSUBLANT, COMSUBRON TWO, and OIC Submarine NR-1.

d. The Submarine NR-1 priority list formulated by the Advisory Group will be used to assist the operating forces in preparation of Submarine NR-1 schedules.